



Weston Solutions, Inc.
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www.westonsolutions.com

The Trusted Integrator for Sustainable Solutions

REMOVAL SUPPORT TEAM 2
EPA CONTRACT EP-W-06-072

RST 2-02-F-2661

TRANSMITTAL MEMO

To: Ángel Rodríguez, On-Scene Coordinator
Caribbean Environmental Protection Branch
U.S. EPA, Region II

From: Smita Sumbaly, Data Reviewer
RST 2, Region II

Subject: Puerto Rico Olefins Asbestos Site
Data Validation Assessment

Date: December 23, 2013

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:
 - Asbestos TEM 2 Samples
- Matrices and Number of Samples
 - Air 2 Samples
- Sampling Date: December 4, 2013

The final data assessment narrative and original analytical data package are attached.

cc: RST 2 SPM: Carlos Huertas
RST 2 SITE FILE TDD #: TO-0029-0122
ANALYTICAL TDD #: TO-0029-0133
PCS#: 7133



U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: December 23, 2013

TO: Ángel Rodríguez, On-Scene Coordinator
U.S. EPA, Region II

FROM: Smita Sumbaly
RST 2 Data Review Team

SUBJECT: QA/QC Compliance Review Summary

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness
Sample Collection, Holding Times, and Preservation
Blank Analysis
Sample Sensitivity
Monthly Report TEM Calibrations

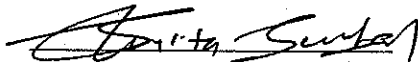
Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

I
Asbestos
TEM

Acceptable as Submitted	<u>X</u>
Acceptable with Comments	<u> </u>
Unacceptable, Action Pending	<u> </u>
Unacceptable	<u> </u>

Data Reviewed by:



Date: 12/23/13

Approved By:



Date: 12/23/13

Area Code/Phone No.:

(732) 585-4410

NARRATIVE

PCS No. 7133

SITE NAME: Puerto Rico Olefins Asbestos Site
PR 385 KM 5.4 Int., 127 Tallaboa Ponente,
Ward Penuelas, Puerto Rico

Laboratory Name: EMSL Analytical, Inc., 200 Route 130 North, Cinnaminson, New Jersey.

INTRODUCTION:

The laboratory's portion of this case consisted of two air samples. Both the samples were collected on December 4, 2013. The EMSL Order ID number is 041333710.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with the analyses of Asbestos TEM

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

Appropriate Form Is and Chain of Custody have been copied from the original data package and appended to the data assessment narrative for reference.

Title: Evaluation of Asbestos Data
Data Assessment Narrative

RFP #: 272C/Task#: 7133

Site: Puerto Rico Olefins Asbestos Site

Lab: EMSL Analytical, Inc.

Matrix/No. of Samples: Air/2

SDG#'s: 041333710

Reviewer: SMITA SUMBALY

Contractor: WESTON-RST 2

A.2.I Validation Flags-

The following flags have been applied in red by the data validator and must be considered by the data user.

J-

This flag indicates the result qualified as estimated.

Red- Line-

A red-line drawn through a sample result indicates an unusable value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

Fully Usable Data-

The results that do not carry "J" or "red-line" are fully usable.

A.2.2 The data assessment is given below and on the attached sheets.

On December 4, 2013, U.S. EPA, Region II, RST 2 personnel collected two air samples from the Puerto Rico Olefins Asbestos Site, located at PR 385 KM 5.4 Int., I27 Tallaboa Ponente, Ward Penuelas, Puerto Rico. On December 13, 2013, both the samples were shipped via FedEx to EMSL Analytical, Inc., 200 Route 130 North, Cinnaminson, NJ. The laboratory verified that the samples were received intact and properly custody sealed.

The preparation and analysis of all air samples was conducted in accordance with the ISO method I0312 (Direct) for the identification of asbestos. Briefly, the samples were collapsed with solution of dimethylformamide, glacial acetic acid and de-ionized water, and then etched in a low temperature plasma etcher to remove the top surface of the filter and other organics. The samples were carbon coated at high vacuum with a thin layer of carbon, placed on 200 mesh copper grids and allowed to dissolve in acetone until cleared of filter polymer.

TEM analysis was performed using a transmission electron microscope equipped with an EDS X-ray analyzer. The air samples were analyzed at various approximate screen magnifications of 19,000 - 20,000X for asbestos structures greater than 0.5 micrometer lengths. An accelerating voltage of 100 KV was applied. The sizing of structures (analysis) was performed on either a JEOL 100CX II or JEOL 1200 EX microscope at approximately 19,000X magnification.

Both the samples met the required project target analytical sensitivity of 0.00013 structure/cc and reporting limit of <0.0004 Structure/cc. For air sampling, 0.45u, 25 mm MCE cassettes were used. Approximately 2400 liter volume was collected in approximately seven hours period of time. The laboratory reported the primary and total number of structure detected and type of asbestos detected. Results are provided in Table 1.

Title: Evaluation of Asbestos Data
Data Assessment Narrative

Client identification (ID) and laboratory ID numbers are as follows:

<u>Client ID No.</u>	<u>Laboratory ID No</u>	<u>Matrix</u>	<u>Sampling Date</u>	<u>Analysis</u>
EMSL Order No.:041333710				
P0002-CR01-AS01-120413	041333710-0001	Air	12/04/2013	Asbestos –TEM via ISO 10312
P0002-CR01-AS02-120413	041333710-0002	Air	12/04/2013	Asbestos –TEM via ISO 10312
Field duplicate sample was not collected for air matrix.				

Two air samples were analyzed by Method TEM ISO 10312 – Ambient Air-Determination of Asbestos Fibers, Direct TEM. Both samples were evaluated under 81 and 85 grids to meet the project target analytical sensitivity of 0.00013 Structure/cc.

Sample # P0002-CR01-AS01-120413: The laboratory analyzed a total of 81 grids openings from two separate grids and found three primary and total structures of chrysotile asbestos. Out of three structures, none of the structures were greater than 5 um or PCM equivalent structure for fibers and bundles.

Sample # P0002-CR01-AS02-120413: The laboratory analyzed a total of 85 grids openings from two separate grids and found eight primary and total structures of chrysotile asbestos. Out of eight structures, three structures were greater than 5 um and three structures for total asbestos fibers, bundles are greater than 5 um. One total PCM equivalent fiber and bundle was found. Four of the fibers were not identified and are rejected as a non-asbestos mineral (NAM).

In conclusion, chrysotile fibers were detected in both the samples and ranged from 0.0004 s/cc to 0.0011 s/cc.

For QC purposes, the laboratory analyzed equipment calibration and was performed in compliance with EMSL's Quality Assurance Manual. One inter-analysts replicate was performed and QC results were acceptable.

TEM Equipment Performance Check

The laboratory performed monthly report for TEM calibrations which includes Chrysotile Beam Dose sensitivity (quarterly), Camera Constant calibrations, Plasma Asher Calibration, Magnification Calibrations, Spot Size Measurements (Quarterly), K Factors (Semi-annually), Detector Resolution(Semi-annually/Quarterly), Significant Na and resolvable Mg-Si Peaks (Quarterly), and daily TEM Calibrations. All calibrations met the "pass" criteria. No qualifiers were applied based upon this parameter.

The results presented for the air samples are acceptable as reported. No qualifications were required.

Title: Evaluation of Asbestos Data
Data Assessment Narrative

A.2.3 Contract Problem/Non-Compliance:

On laboratory tabulated sample results forms, incorrect sampling date was entered by the laboratory. Correct sampling date should be 12/04/2013 not 4/10/2013 as entered by the laboratory. Data reviewer manually changed the sampling date and initial it.

Contractor Reviewer:


Signature:

12/23/13
Date:

Verified by:


Signature:

12/27/13
Date:

TABLE 1

Project: Puerto Rico Olefins Asbestos Site

Sampling Date: December 4, 2013

ISO 10312 - Ambient Air-Determination of Asbestos Fibers - Direct Transfer Transmission Electron Microscopy Method

Client Sample ID Number	Laboratory Sample ID Number	Air Volume (L)	# of Grid opening/Area Analyzed (mm ²)	Total Number of Structure Detected	Asbestos Mineral Type Detected	Analytical Sensitivity (str/cc)	Limit of Detection (str/mm ² or s/cc)	Reported Concentration (str/cc)	Reported Density (str/mm ²)
P0002-CR01-AS01-120413	041333710-0001	2711.28	81/0.0132	3	Chrysotile	0.0001 s/cc	0.0004 s/cc	0.0004	2.81
P0002-CR01-AS02-120413	041333710-0002	2616.47	85/0.013	8	Chrysotile	0.0001 s/cc	0.0004 s/cc	0.0011	7.24

L - Liter

str/cc - Structure/Cubic Centimeter

str/mm² - Structure/Square millimeter



EMSL ANALYTICAL, INC.
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December 18, 2013

Smita Sumbaly
Weston Solutions
1090 King Georges Post Road
Suite 201
Edison, NJ 08837
732-585-4400

Re: Narrative TEM ISO 10312 041333710; RFP #: 272C, Site #:0029-0122

Dear Smita:

On December 14, 2013, EMSL Analytical, Inc. in Cinnaminson, NJ received two (2) air samples via overnight carrier from Weston Solutions for asbestos content analysis via TEM ISO 10312. The samples were logged in following normal lab procedures. Samples were received under Chain of Custody and in good condition.

TEM ISO 10312

TEM analysis was performed using the following method: TEM ISO 10312: 1995 Ambient Air Determination of Asbestos Fibres Direct Transfer Transmission Electron Microscopy.

Sample preparation was completed from a cut wedge of the collection filter. The filter wedge is placed on a clean slide and slowly collapsed with a solution of dimethylformamide, glacial acetic acid, and de-ionized water. This procedure leaves a thin, transparent polymer film, with particles and fibers embedded in the upper surface. The microscope slide with the collapsed filter portions are placed in a calibrated plasma asher where a portion of the filter surface is removed. The microscope slide is then placed in a carbon evaporator where a thin deposition of carbon is laid down. A small portion of the carbon coated filter is removed from the slide and placed on top of copper mesh TEM grids. These grids are laid in an acetone jaffe washer until the filter wicks away, leaving the fibers and particles embedded in the carbon replica.

Client specific directions and modifications that were followed include:

- An analytical sensitivity of 0.00013 S/cc was specified, for a reporting limit of <0.0004 str/cc.
- TEM (0.45u) 25mm MCE cassettes were used for sampling.
- Aspect ratio applied was modified to greater than or equal to 3:1.
- Analysis was terminated once the analytical sensitivity was met or 100 structures were recorded.
- Structures greater than or equal to 0.5 microns in length were recorded.

A custom report template was used to electronically record and report results. All concentrations were derived from the total structure count. For structure counts less than 4, the asbestos concentrations were reported as less than one-sided upper 95% confidence limit. For 0 structures, this is equal to 2.99 times the analytical sensitivity.





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Results

All samples associated with this EMSL order ID were analyzed via transmission electron microscopy (TEM) using procedures from TEM ISO 10312. Analysis was performed on JEOL 100 CX II and JEOL 1200 EX microscopes at approximately 19,000X.

Quality Control Performed

The Quality Control (QC) and equipment calibration was performed in compliance with EMSL's Quality Assurance Manual. One inter-analyst QC sample was analyzed with acceptable results.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Robyn Denton

*Asbestos Special Projects Manager
EMSL Cinnaminson, NJ*





2. Tabulated Sample Results



EMSL ANALYTICAL, INC.

EMSL Analytical, Inc.

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Attn: Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Road, Suite 201
Edison, NJ 08837
Phone: 735-585-4410

Customer ID: RFWE53
Customer PO: NA
Received: 12/14/2013 11:30
Date Sampled: 4/10/2013
EMSL Order: 041333710
Report Date: 12/18/13

Project: Site #: 0029-0122 / RFP #: 272C

ISO 10312 International Standard for the Determination of Asbestos Fibers-Direct Transfer

Customer Sample Number: P0002-CR01-AS01-120413 Air volume: 2711.28 Liters
EMSL Sample Number: 041333710-0001 Grid Opening Area: 0.0132 mm²
Minimum Level of analysis (chrysotile): CD Grid Openings Analyzed: 81
Minimum Level of analysis (amphibole): ADX
Magnification used for fiber counting: 19,000
Aspect ratio for fiber definition: 3:1
Min Length/Min Width to be counted (µm): >=0.5 / none
Area of collection filter (mm²): 385 Analysis Date: 12/15/2013
Result of Chi² Test: 78.00 Random Analyst: C. LITTLE

Analytical Sensitivity: 0.0001 Structure/cc Limit of Detection: 0.0004 Structure/cc

Structure Class	Min 10 Level	Primary Str.	Total Str.	Density Str/mm ²	Conc. (Str/cc)	Poisson 95 % Confidence Interval	
						LCL (Str/cc)	UCL (Str/cc)
Asbestos Structures (Chrys)	CD	3	3	2.81	0.0004	0.0001	0.0010
Asbestos Structures (Amph)	ADX	0	0	< 2.80	< 0.0004	0.0000	0.0004
Total Asbestos Structures	CD/ADX	3	3	2.81	0.0004	0.0001	0.0010

Supplemental Structure Size Concentrations

Asbestos Structure >5 µm (Chrys)	CD	0	-	< 2.80	< 0.0004	0.0000	0.0004
Asbestos Structure >5 µm (Amph)	ADX	0	-	< 2.80	< 0.0004	0.0000	0.0004
Total Asbestos Structures >5 µm	CD/ADX	0	-	< 2.80	< 0.0004	0.0000	0.0004
Asbestos Fibers, Bundles >5 µm (Chrys)	CD	-	0	< 2.80	< 0.0004	0.0000	0.0004
Asbestos Fibers, Bundles >5 µm (Amph)	ADX	-	0	< 2.80	< 0.0004	0.0000	0.0004
Total Asbestos Fibers, Bundles >5 µm	CD/ADX	-	0	< 2.80	< 0.0004	0.0000	0.0004
PCMe Structures (Chrys)	CD	0	-	< 2.80	< 0.0004	0.0000	0.0004
PCMe Structures (Amph)	ADX	0	-	< 2.80	< 0.0004	0.0000	0.0004
Total PCMe Structures	CD/ADX	0	-	< 2.80	< 0.0004	0.0000	0.0004
PCMe Fibers and Bundles (Chrys)	CD	-	0	< 2.80	< 0.0004	0.0000	0.0004
PCMe Fibers and Bundles (Amph)	ADX	-	0	< 2.80	< 0.0004	0.0000	0.0004
Total PCMe Fibers and Bundles	CD/ADX	-	0	< 2.80	< 0.0004	0.0000	0.0004

Non Asbestos Structures NAM 0 0 - -

Asbestos Types Present: Chrysotile

Comment:

Robyn Denton

Approved Signatory

Concentrations and 95% Confidence Intervals based on a Poissonian distribution. Structure counts above 31 may be better expressed with a Gaussian distribution. EMSL maintains liability limited to the cost of analysis. This report relates only to the samples reported above and may not be reproduced except in full without written approval of EMSL. EMSL is not responsible for sample collection activities or analytical limitations. Interpretation and use of results are the responsibility of the client.



EMSL ANALYTICAL, INC.

EMSL Analytical, Inc.

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Attn: Smita Sumbaly
Weston Solutions, Inc.
1090 King Georges Road, Suite 201
Edison, NJ 08837
Phone: 735-585-4410

Customer IO: RFWE53
Customer PO: NA
Received: 12/14/2013 11:30
Date Sampled: 4/10/2013
EMSL Order: 041333710
Report Date: 12/18/13

Project: Site #: 0029-0122 / RFP #: 272C

ISO 10312 International Standard for the Determination of Asbestos Fibers-Direct Transfer Transmission Electron Microscopy

Customer Sample Number: P0002-CR01-AS02-120413 Air volume: 2616.47 Liters
EMSL Sample Number: 041333710-0002 Grid Opening Area: 0.013 mm²
Minimum Level of analysis (chrysotile): CD Grid Openings Analyzed: 85
Minimum Level of analysis (amphibole): ADX
Magnification used for fiber counting: 19,000
Aspect ratio for fiber definition: 3:1
Min Length/Min Width to be counted (µm): >=0.5 / none
Area of collection filter (mm²): 385
Result of Ch² Test: 98.25 Random
Analysis Date: 12/15/2013
Analyst: C. LITTLE

Analytical Sensitivity: 0.0001 Structure/cc Limit of Detection: 0.0004 Structure/cc

Structure Class	Min IO Level	Primary Str.	Total Str.	Density Str/mm ²	Conc. (Str/cc)	Poisson 95 % Confidence Interval	
						LCL (Str/cc)	UCL (Str/cc)
Asbestos Structures (Chrys)	CD	8	8	7.24	0.0011	0.0005	0.0021
Asbestos Structures (Amph)	ADX	0	0	< 2.71	< 0.0004	0.0000	0.0004
Total Asbestos Structures	CD/ADX	8	8	7.24	0.0011	0.0005	0.0021

Supplemental Structure Size Concentrations

Asbestos Structure >5 µm (Chrys)	CD	3	-	2.71	0.0004	0.0001	0.0010
Asbestos Structure >5 µm (Amph)	ADX	0	-	< 2.71	< 0.0004	0.0000	0.0004
Total Asbestos Structures >5 µm	CD/ADX	3	-	2.71	0.0004	0.0001	0.0010
Asbestos Fibers, Bundles >5 µm (Chrys)	CD	-	3	2.71	0.0004	0.0001	0.0010
Asbestos Fibers, Bundles >5 µm (Amph)	ADX	-	0	< 2.71	< 0.0004	0.0000	0.0004
Total Asbestos Fibers, Bundles >5 µm	CD/ADX	-	3	2.71	0.0004	0.0001	0.0010
PCMe Structures (Chrys)	CD	0	-	< 2.71	< 0.0004	0.0000	0.0004
PCMe Structures (Amph)	ADX	0	-	< 2.71	< 0.0004	0.0000	0.0004
Total PCMe Structures	CD/ADX	0	-	< 2.71	< 0.0004	0.0000	0.0004
PCMe Fibers and Bundles (Chrys)	CD	-	1	< 2.71	< 0.0004	0.0000	0.0006
PCMe Fibers and Bundles (Amph)	ADX	-	0	< 2.71	< 0.0004	0.0000	0.0004
Total PCMe Fibers and Bundles	CD/ADX	-	1	< 2.71	< 0.0004	0.0000	0.0006

Non Asbestos Structures NAM 4 4 - -

Asbestos Types Present: Chrysotile

Comment:

Robyn Denton

Approved Signatory

Concentrations and 95% Confidence Intervals based on a Poissonian distribution. Structure counts above 31 may be better expressed with a Gaussian distribution. EMSL maintains liability limited to the cost of analysis. This report relates only to the samples reported above and may not be reproduced except in full without written approval of EMSL. EMSL is not responsible for sample collection activities or analytical limitations. Interpretation and use of results are the responsibility of the client.

041333710

CHINAMINSON, N.J.
2013 DEC 14 AM 11:44

**SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #**

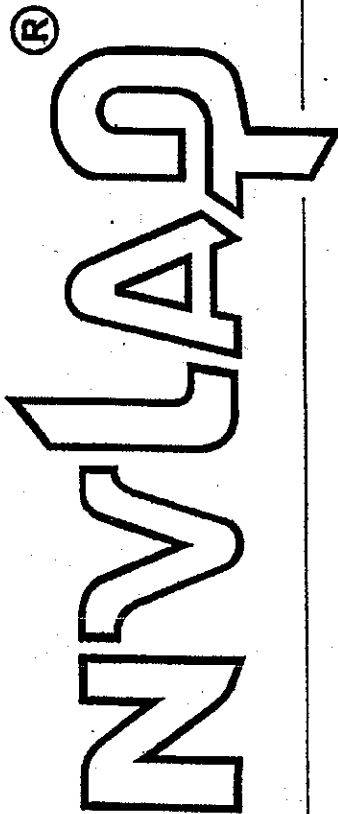
Qmb-IX-1304 12.14.13

①



7. NVLAP/AIHA Certifications

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101048-0

EMSL Analytical, Inc.
Cinnaminson, NJ

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

AIRBORNE ASBESTOS FIBER ANALYSIS

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).*

2013-07-01 through 2014-06-30

Effective dates



Mr. D. M. L. D.

For the National Institute of Standards and Technology



**National Voluntary
Laboratory Accreditation Program**



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Mr. Stephen Siegel, CIH
Phone: 800-220-3675 Fax: 856-786-5973
E-Mail: ssiegel@emsl.com
URL: <http://www.emsl.com>

AIRBORNE ASBESTOS FIBER ANALYSIS (TEM)

NVLAP LAB CODE 101048-0

NVLAP Code Designation / Description

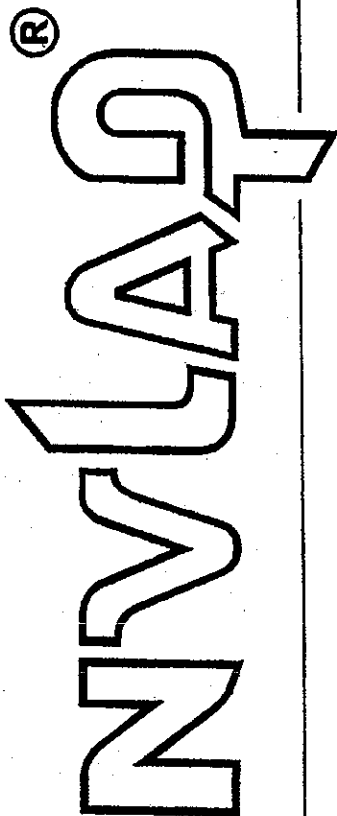
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.
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2013-07-01 through 2014-06-30

Effective dates

For the National Institute of Standards and Technology

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101048-0

EMSL Analytical, Inc.
Cinnaminson, NJ

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

BULK ASBESTOS FIBER ANALYSIS

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-IAC-IAF Communique dated January 2009).*

2013-07-01 through 2014-06-30

Effective dates



Wm. D. M. L.

For the National Institute of Standards and Technology



**National Voluntary
Laboratory Accreditation Program**



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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Cinnaminson, NJ 08077
Mr. Stephen Siegel, CIH
Phone: 800-220-3675 Fax: 856-786-5973
E-Mail: ssiegel@emsl.com
URL: <http://www.emsl.com>

BULK ASBESTOS FIBER ANALYSIS (PLM)

NVLAP LAB CODE 101048-0

NVLAP Code Designation / Description

18/A01 EPA 600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples

18/A03 EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

2013-07-01 through 2014-06-30

Effective dates

For the National Institute of Standards and Technology



AIHA
Laboratory Accreditation
Programs, LLC

AIHA Laboratory Accreditation Programs, LLC

acknowledges that:

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077
Laboratory ID: 100194

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

LABORATORY ACCREDITATION PROGRAMS

- | | |
|--|-----------------------------------|
| <input checked="" type="checkbox"/> INDUSTRIAL HYGIENE | Accreditation Expires: 07/01/2014 |
| <input checked="" type="checkbox"/> ENVIRONMENTAL LEAD | Accreditation Expires: 07/01/2014 |
| <input checked="" type="checkbox"/> ENVIRONMENTAL MICROBIOLOGY | Accreditation Expires: 07/01/2014 |
| <input type="checkbox"/> FOOD | Accreditation Expires: |

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

S. D. Allen Iske, PhD, CIH, CSP
Chairperson, Analytical Accreditation Board

Cheryl O. Morton

Cheryl O. Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision 12: 03/29/2012

Date Issued: 07/31/2012



AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: **100194**
Issue Date: 07/31/2012

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or revocation. A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA-LAP, LLC website at: <http://www.aihaaccreditedlabs.org>

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 02/01/1989

IHLAP Scope Category	Field of Testing (FoT)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte (for internal methods only)
Chromatography Core	Gas Chromatography	GC/ FID	NIOSH 1003	
			NIOSH 1005	
			NIOSH 1400	
			NIOSH 1500	
			NIOSH 1550	
			NIOSH 1603	
		GC/ECD	NIOSH 2000	
			NIOSH 5502	
			NIOSH 5503	
			NIOSH 5510	
	GC/MS	GC/NPD	OSHA 1010	
			NIOSH 2551	
		GC/MS	EPA TO-15	
			NIOSH 1501	
			NIOSH 6004	
			NIOSH 6011	
Ion Chromatography (IC)	Gas Chromatography (Diffusive Samplers)		NIOSH 7903	
			OSHA ID-214	
			OSHA ID-215	
			NIOSH 5506	
			NIOSH 2016	
	Liquid Chromatography	HPLC/FL		



IHLAP Scope Category	Field of Testing (FoT)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte (for internal methods only)
Spectrometry Core	Atomic Absorption	CVAA	NIOSH 6009	
			OSHA ID-145	SOP LM-015
			OSHA ID-145	SOP LM-013
		FAA	NIOSH 7082	
		GFAA	NIOSH 7105	
	Inductively-Coupled Plasma	ICP/MS	NIOSH 7300 Modified	
		ICP/AES	NIOSH 7300	
	X-ray Diffraction (XRD)		NIOSH 7500	
			OSHA ID-142	
Asbestos/Fiber Microscopy Core	UV/VIS (Colorimetric)		NIOSH 6010	
	Polarized Light Microscopy (PLM)		EPA 600/R-93/116	
	Phase Contrast Microscopy (PCM)		NIOSH 7400	
	Transmission Electron Microscopy (TEM)		EPA AHERA - 40 CFR Part 763	
			NIOSH 7402	
Miscellaneous Core	Gravimetric		NIOSH 0500	
			NIOSH 0600	
			NIOSH 5524	
	Thermo-optical Analysis (TOA)		NIOSH 5040	

The laboratory participates in the following AIHA-LAP, LLC-approved proficiency testing programs:

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| <ul style="list-style-type: none"> ✓ AIHA-PAT Programs, LLC IHPAT Metals ✓ AIHA-PAT Programs, LLC IHPAT Organic Solvents ✓ AIHA-PAT Programs, LLC IHPAT Silica ✓ AIHA-PAT Programs, LLC IHPAT Diffusive Sampler (3M) ☐ AIHA-PAT Programs, LLC IHPAT Diffusive Sampler (SKC) ☐ AIHA-PAT Programs, LLC IHPAT Diffusive Sampler (AT) ✓ AIHA-PAT Programs, LLC IHPAT Asbestos ☐ AIHA-PAT Programs, LLC Bulk Asbestos (BAPAT) ☐ AIHA-PAT Programs, LLC Beryllium (BePAT) ✓ HSE Workplace Analytical Scheme for Proficiency (WASP) (Formaldehyde) ☐ HSE Workplace Analytical Scheme for Proficiency (WASP) (Thermal Desorption Tubes) | <ul style="list-style-type: none"> ☐ Pharmaceutical Round Robin ☐ Compressed/Breathing Air Round Robin ✓ National Voluntary Laboratory Accreditation Program (NVLAP - determined at the time of site assessment) ☐ New York State Department of Health (NYS DOH - PCM and TEM) ✓ ERA Air and Emissions standards for indoor air quality ☐ Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung (IFA, formerly BGIA) ☐ Institut de Recherche Robert-Sauvé en Santé et en Sécurité du Travail (IRSST) |
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